



**THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicant(s):** James F. Hainfeld, et. al.

**Examiner:** Unassigned

**Serial No:** 10/705,614

**Art Unit:** Unassigned

**Filed:** November 10, 2003

**Docket:** 16049Z

**For:** METHODS OF ENHANCING  
RADIATION EFFECTS WITH  
METAL NANOPARTICLES

**Dated:** December 16, 2003

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with 37 C.F.R. §§ 1.97 and 1.98, it is requested that the following references, which are also listed on the attached Form PTO-1449, be made of record in the above-identified case.

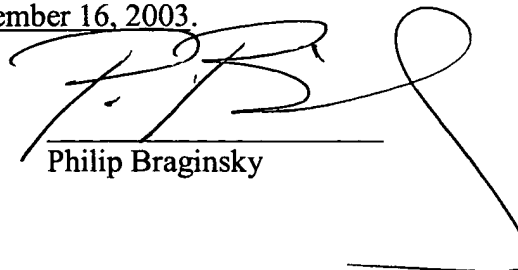
1. United States Patent No. 5,521,289, issued to James F. Hainfeld, et. al., dated May 28, 1996;
2. United States Patent No. 6,001,054, issued to D. F. Regulla, et. al., dated December 14, 1999;

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**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on December 16, 2003.

**Dated:** December 16, 2003



Philip Braginsky

3. United States Patent No. US 6,369,206 B1, issued to Robert D. Leone, et. al., dated April 9, 2002;

4. Manuel H. Castillo, et. al., "Effects of Radiotherapy on Mandibular Reconstruction Plates", The American Journal of Surgery, Vol. 156, pp. 261 – 263, (1988);

5. D. F. Regulla, et. al., "Physical and Biological Interface Dose Effects in Tissue due to X-Ray Induced Release of Secondary Radiation from Metallic Gold Surfaces", Radiation Research, Vol. 150, pp. 92 – 100, (1998);

6. Indra J. Das, et. al., "Backscatter dose perturbation in kilovoltage photon beams at high atomic number interfaces", Medical Physics, Vol. 22, No. 6, pp. 767 – 773, (1995);

7. D. M. Herold, et. al. "Gold microspheres: a selective technique for producing biologically effective dose enhancement", International Journal of Radiation Biology, Vol. 76, No. 10, pp. 1357 – 1364, (2000); and

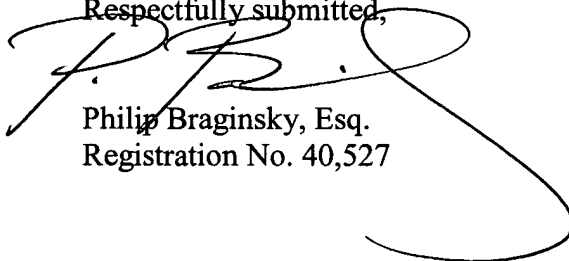
8. Hiromichi Matsudaira, et. al., "Iodine Contrast Medium Sensitizes Cultured Mammalian Cells to X Rays but not to  $\gamma$  Rays", Radiation Research, Vol. 84, pp. 144 – 148, (1980).

Pursuant to 37 C.F.R. §1.98(d), copies of the above listed references are not provided, as these references were previously submitted to the Examiner in connection with parent case, U.S. Serial Number 10/387,059 filed on March 12, 2003.

Consideration of this Information Disclosure Statement is respectfully requested, since the art provided may be material to the examination of the present application as filed under 37 C.F.R. §1.56.

Inasmuch as this Information Disclosure Statement is being submitted in accordance with the schedule set out in 37 C.F.R §1.97(b), no statement or fee is required.

Respectfully submitted,

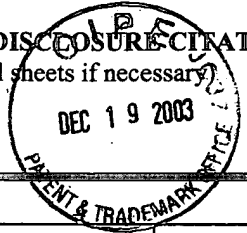


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PB/XZ:ab

# INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)



Docket Number (Optional)  
16049Z

Application Number  
10/705,614

Applicant(s)

James F. Hainfeld, et. al.

Filing Date

November 10, 2003

Group Art Unit

Unassigned

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5,521,289	5/28/96	James F. Hainfeld, et. al.			
		6,001,054	12/14/99	D. F. Regulla, et. al.			
		US 6,369,206 B1	4/9/02	Robert D. Leone, et. al.			

## FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Manuel H. Castillo, et. al., "Effects of Radiotherapy on Mandibular Reconstruction Plates", <u>The American Journal of Surgery</u> , Vol. 156, pp. 261 - 263, (1988)
	D. F. Regulla, et. al., "Physical and Biological Interface Dose Effects in Tissue due to X-Ray Induced Release of Secondary Radiation from Metallic Gold Surfaces", <u>Radiation Research</u> , Vol. 150, pp. 92 - 100, (1998)
	Indra J. Das, et. al., "Backscatter dose perturbation in kilovoltage photon beams at high atomic number interfaces", <u>Medical Physics</u> , Vol. 22, No. 6, pp. 767 - 773, (1995)
	D. M. Herold, et. al. "Gold microspheres: a selective technique for producing biologically effective dose enhancement", <u>International Journal of Radiation Biology</u> , Vol. 76, No. 10, pp. 1357 - 1364, (2000)
	Hiromichi Matsudaira, et. al., "Iodine Contrast Medium Sensitizes Cultured Mammalian Cells to X Rays but not to Y Rays", <u>Radiation Research</u> , Vol. 84, pp. 144 - 148, (1980)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**  
(Under 37 CFR 1.97(b) r 1.97(c))

Docket No.  
**16049Z**

In Re Application Of: **James F. Hainfeld, et al.**

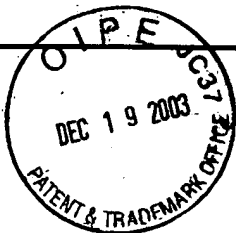
Serial No.  
**10/705,614**

Filing Date  
**November 10, 2003**

Examiner  
**Unassigned**

Group Art Unit  
**Unassigned**

Title: **METHODS OF ENHANCING RADIATION EFFECTS WITH METAL NANOPARTICLES**



Address to:  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**37 CFR 1.97(b)**

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

**37 CFR 1.97(c)**

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

☐ the statement specified in 37 CFR 1.97(e);

**OR**

☐ the fee set forth in 37 CFR 1.17(p).

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**  
(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.  
16049Z

In Re Application: James F. Hainfeld, et al.

Serial No.

10/705,614

Filing Date

November 10, 2003

Examiner

Unassigned

Group Art Unit

Unassigned

**METHODS OF ENHANCING RADIATION EFFECTS WITH METAL NANOPARTICLES**



**Payment of Fee**

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

- ☐ A check in the amount of \_\_\_\_\_ is attached.
- ☒ The Director is hereby authorized to charge and credit Deposit Account No. **19-1013/SSMP** as described below.
- ☐ Charge the amount of \_\_\_\_\_
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**Certificate of Mailing by First Class Mail**

I certify that this document and fee is being deposited on 12/16/03 with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22312-1450.

\_\_\_\_\_  
Signature

Philip Braginsky

\_\_\_\_\_  
Typed or Printed Name

~~\*This certificate may only be used if paying by deposit account.~~

Signature

Dated: December 16, 2003

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